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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,546	04/25/2005	Bernie Volz	P16816-US2	7325

27045 7590 01/18/2007		EXAMINER	
ERICSSON INC.		BRUCKART, BENJAMIN R	
6300 LEGACY DRIVE			
M/S EVR 1-C-11		ART UNIT	PAPER NUMBER
PLANO, TX 75024		2155	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	**Applicant(s)**
Office Action Summary	10/510,546	VOLZ ET AL.
	Examiner	**Art Unit**	
	Benjamin R. Bruckart	2155	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *32-97* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *32-97* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Regarding claim 79, a gateway resource manager for a communication gateway that has a limited number of available outside-realm gateway addresses for enabling outside-realm representation of inside-realm nodes (Brustoloni: col. 5, lines 25-50), said gateway resource manager comprising:

- means for receiving multiplexation information in the form of predetermined connection information (Brustoloni: col. 1, lines 25-66);

- means for identifying, whenever possible, based on said predetermined connection information, further connection information that in combination with said predetermined connection information defines an outside-realm gateway state representation that has no counterpart in a predetermined set of existing gateway connection states (Brustoloni: col. 1, lines 25-56 predetermined connection information is the translation table; globally unique), wherein said predetermined connection information includes at least one of network address information and port information of at least one of said inside- realm node and said outside-realm node and said further connection information includes an outside-realm gateway address (Brustoloni: col. 1, lines 25-66); and

means for initiating establishment of a connection based on said outside-realm gateway state representation (Brustoloni: col. 1, lines 59-60).

Regarding claim 80, the gateway resource manager according to claim 79, wherein said receiving means is operable for receiving inside-realm network address information corresponding to an inside node, and predetermined connection information including at least one of address information of an outside node and inside node port information (Brustoloni: col. 1, lines 46-66);

said outside-realm gateway address is to be used in establishing a dynamic gateway connection state for a flow between said outside node and said inside node through said gateway (Brustoloni: col. 5, lines 25-50);

said means for initiating establishment of a connection comprises means for requesting said gateway to establish said dynamic gateway connection state based on said identified

outside-realm gateway address, said predetermined connection information and said inside-realm
network address information (Brustoloni: col. 1, lines 25-66).

Regarding claim 81, the gateway resource manager according to claim 80, wherein said
predetermined connection information is an outside node address (Brustoloni: col. 1, lines 46-
66), and said requesting means is operable for requesting allocation of said identified outside-
realm gateway address to said inside node for traffic coming from said outside node address
(Brustoloni: col. 5, lines 26-50).

Regarding claim 82, the gateway resource manager according to claim 80, wherein said
requesting means is operable for sending a request to said gateway for establishment of a
partially complete gateway connection state based on said identified outside-realm gateway
address, said predetermined connection information and said inside-realm network address
information (Brustoloni: col. 5, lines 25-50).

Regarding claim 83, the gateway resource manager according to claim 82, further comprising:
        means for receiving a reply from said gateway that said partially complete gateway
connection state has been created (Brustoloni: Fig. 7; return allocated values); and
        means for notifying said outside node of said identified outside-realm gateway address in
response to said reply from said gateway (Brustoloni: Fig. 7).

Regarding claim 84, the gateway resource manager according to claim 82, wherein said means
for identifying an outside-realm gateway address is operable for identifying an outside-realm
gateway address, which in combination with said predetermined information defines a partially
complete outside-realm gateway state representation that has no counterpart in any existing
partially complete gateway connection state (Brustoloni: col. 1, lines 44-66).

Regarding claim 85, the gateway resource manager according to claim 84, further comprising
means for maintaining a list representation of existing partially complete gateway connection
states, and wherein said partially complete outside-realm representation is identified based on

comparison with corresponding information of all existing partially complete gateway

connection states represented in said list representation (Brustoloni: col. 1, lines 44-66).

Claims 49-78 are substantially similar to claims 32-48, 87-97 and are rejected under the same grounds.

Remarks

The examiner finds several limitations using poor English as noted in 112, 2nd rejections

and not sufficiently defined in the claims. The broad claims read broadly and broad limitations

are loosely coupled to other undefined claims. The examiner cannot find the distinguishing

features from the already well known in the art Network Address Translation protocols. The

examiner has equated the partially complete address to an incomplete or internal or global only

address not reconciled to the complete or mapped internal or corresponding global address.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Benjamin R Bruckart whose telephone number 571-272-3982.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone numbers for the

organization where this application or proceeding is assigned are (571) 273-8300 for regular

communications and after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the examiner whose telephone number is 571-272-3982.

Benjamin R Bruckart
Examiner
Art Unit 2155

SUPERVISORY PATENT EXAMINER

Detailed Action

Claims 32-97 are pending in this Office Action.

Claims 32, 34, 40, 49, 51, 57, and 65 have been amended.

Claims 66-97 are new.

Election/Restrictions

Applicant has selected group 3 without traverse.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 32-34, 36, 49-51, 79 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 32, 49, and 79 recite the limitation "whenever possible" in line 6. This limitation is confusing and leaves the examiner to ask what if it isn't possible. The examiner assumes applicant's invention will perform the steps "whenever possible" is an inherent trait and the claiming of which leaves the examiner concerned about "whenever not possible" and it is indefinite. Claim 32 also is poorly phrased with commas making it unclear around limitation "identifying." Identifying what? Appropriate correction is required.

Claims 33 and 50 recite "a separate list representation." A separate list from what? Applicant has not thoroughly defined a previous list or how this data is separate from another set of data.

Claims 34 and 51 recite "partially complete gateway state representation." How is it partially complete? How can a state be partially complete especially when it is a representation?

Claim 36 recites "partially complete" outside-realm representation and gateway

connection state. This is rejected for the same reasons of claim 34, it is unclear the true meaning

of these terms. See remarks below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 32-97 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,886,103 by Brustoloni et al.

Regarding claim 32, a method for <u>supporting establishment of</u> a connection between a node of an

inside address realm and a node of an outside address realm through an intermediate

communication gateway having a <u>limited</u> number of <u>available</u> outside-realm gateway addresses

for enabling outside-realm representation of inside-realm nodes (Brustoloni: col. 1, lines 25-51),

said method comprising the steps of:

identifying, whenever possible, based on <u>multiplexation information in the form of</u>

predetermined connection information, further connection information that in combination with

said predetermined connection information defines an outside-realm gateway state representation

that has no counterpart in a predetermined set of existing gateway connection states (Brustoloni:

col. 1, lines 49-56 predetermined connection information is the translation table), <u>wherein</u> said

predetermined connection information <u>includes</u> at least one of network address information and

port information <u>of at least one of said inside-realm node and said outside-realm node</u> and said

further connection information <u>includes</u> an outside-realm gateway address (Brustoloni: col. 1, lines 49-51); and

initiating establishment of said connection based on said outside-realm gateway state representation (Brustoloni: col. 1, lines 59-60).

Regarding claim 33, the method according to claim 32, further comprising the step of maintaining a separate list representation of said predetermined set of existing gateway connection states (Brustoloni: col. 1, lines 49-56; translation table), and wherein said outside-realm gateway state representation is identified based on comparison with corresponding information of said gateway connection states represented in said list representation (Brustoloni: col. 7, lines 62-67).

Regarding claim 34, the method according to claim 32, wherein said predetermined connection information, <u>for an inside-realm initiated connection,</u> includes at least one of outside node address information and outside node port information (Brustoloni: col. 1, lines 25-51), said outside-realm gateway state representation is an at least partially complete gateway state representation (Brustoloni: col. 1, lines 25-51; globally unique IP and GPN), and said predetermined set of gateway connection states includes the existing gateway connection states in said gateway (Brustoloni: col. 1, lines 49-56; completed translation to private IP).

Regarding claim 35, the method according to claim 34, wherein said further connection information also includes associated gateway port information (Brustoloni: col. 1, lines 49-56; GPN), said outside-realm representation is a complete outside-realm representation (globally unique), and said step of initiating establishment of said connection comprises the step of requesting that said gateway creates a gateway connection state based on said complete outside-realm representation (Brustoloni: col. 1, lines 25-51).

Regarding claim 36, the method according to claim 34, wherein said outside-realm representation is a partially complete outside-realm representation, and said step of initiating establishment of said connection comprises the step of requesting that said gateway creates a

partially complete gateway connection state based on said partially complete outside-realm representation (Brustoloni: col. 1, lines 25-51; incoming packets are addressed to the partially complete representation (the global address) and are translated to the private address).

Regarding claim 37, the method according to claim 36, further comprising the step of selecting, if said identification is not possible, an outside-realm gateway address among the least utilized outside-realm gateway addresses to define said partially complete outside-realm representation to be used for initiating establishment of said connection (Brustoloni: col. 5, lines 28-50; free addresses).

Regarding claim 38, the method according to claim 37, further comprising the step of verifying, upon receipt of a packet from said inside node to said gateway, that said partially complete outside-realm representation in further combination with inside node port information associated with said packet, defines a complete outside-realm gateway state representation that has no counterpart in any existing gateway connection state (Brustoloni: globally unique; col. 5, lines 40-50).

Regarding claim 39, the method according to claim 38, further comprising the step of transforming a partially complete gateway connection state created in said gateway based on said partially complete outside-realm representation into a complete gateway connection state based on said complete outside-realm representation, thereby completely establishing said connection (Brustoloni: globally unique; col. 5, lines 40-50).

Regarding claim 40, the method according to claim 32, wherein said predetermined connection information, for an outside-realm initiated connection, includes at least one of outside node address information and inside node port information, said outside-realm gateway state representation is a partially complete gateway state representation and said predetermined set of gateway connection states includes the existing partially complete gateway connection states in said gateway (Brustoloni: col. 1, lines 25-51).

Regarding claim 41, the method according to claim 40, wherein said step of identifying further connection information including an outside-realm gateway address comprises the step of traversing outside-realm gateway addresses of the gateway until finding an outside-realm gateway address, which in combination with said predetermined connection information has no counterpart in any existing partially complete gateway connection state (Brustoloni: col. 8, lines 49-57).

Regarding claim 42, the method according to claim 40, wherein said step of identifying further connection information including an outside-realm gateway address comprises the step of verifying that a pre-allocated outside-realm gateway address in combination with said predetermined connection information has no counterpart in any existing partially complete gateway connection state (Brustoloni: col. 5, lines 27-50; globally unique; clm 5).

Regarding claim 43, the method according to claim 40, wherein said step of initiating establishment of said connection comprises the step of requesting that said gateway establishes a partially complete gateway connection state based on said partially complete outside-realm representation (Brustoloni: col. 5, lines 27-50).

Regarding claim 44, the method according to claim 43, further comprising the step of transforming, upon receipt of a packet from said outside node to said gateway, said partially complete gateway connection state that has been created in said gateway into a complete gateway connection state based on complementary connection information associated with said packet (Brustoloni: col. 5, lines 27-50).

Regarding claim 45, the method according to claim 44, wherein said predetermined connection information is predetermined outside node address information, and said complementary connection information includes inside node port information and outside node port information (Brustoloni: col. 5, lines 27-50).

Regarding claim 46, the method according to claim 44, wherein said predetermined connection information is predetermined inside node port information, and said complementary connection information includes outside node address information and outside node port information (Brustoloni: col. 5, lines 27-50; Fig. 6).

Regarding claim 47, the method according to claim 40, further comprising the steps of:

selecting, if said identification is not possible based on predetermined inside node port information, another gateway port (Brustoloni: col. 5, lines 27-50; allocate an available address with IP and GPN); and

identifying further connection information including an outside-realm gateway address based on said selected gateway port to define a unique, partially complete outside-realm representation of a gateway connection state (Brustoloni: col. 5, lines 27-50).

Regarding claim 48, the method according to claim 40, wherein said predetermined connection information originates from a user-resource identifier query initiated from said outside node (Brustoloni: col. 1, lines 45-66).

Regarding claim 86, the method according to claim 32, wherein said connection establishment is based on said outside-realm gateway state representation and a corresponding inside-realm gateway state representation (Brustoloni: col. 1, lines 25-56).

Regarding claim 87, the method according to claim 32, further comprising the steps of:

preparing, at said outside node, a user-resource identifier query that includes an inside node identifier as well as said predetermined connection information including at least one of outside node address information and inside node port information (Brustoloni: col. 1, lines 45-66);

determining inside-realm network address information based on said inside node identifier included in said identifier query (Brustoloni: col. 1, lines 45-66; translation table);

identifying, based on said predetermined connection information included in said identifier query, said outside-realm gateway address to be used in establishing a dynamic

gateway connection state for a flow between said outside node and said inside node through said gateway (Brustoloni: col. 1, lines 25-5); and

establishing said dynamic gateway connection state based on said identified outside-realm gateway address, said predetermined connection information included in said identifier query and said inside-realm network address information, thereby enabling an outside-realm initiated connection (Brustoloni: col. 3, lines 31-62).

Regarding claim 88, the method according to claim 87, wherein said step of establishing said dynamic gateway connection state comprises the steps of:

creating a partially complete gateway connection state based on said identified outside-realm gateway address, said predetermined connection information included in said identifier query and said inside-realm network address information (Brustoloni: col. 1, lines 45-66); and

upon receipt of a packet from said outside node to said gateway, transforming said partially complete gateway state into a complete gateway connection state based on complementary connection information associated with said packet (Brustoloni: col. 5, lines 30-50).

Regarding claim 89, the method according to claim 87, wherein said step of identifying an outside-realm gateway address comprises the step of identifying an outside-realm gateway address (Brustoloni: col. 1, lines 25-50; global address), which in combination with said predetermined information included in said identifier-query defines a partially complete outside-realm gateway state representation that has no counterpart in any existing partially complete gateway connection state (Brustoloni: col. 1, lines 25-50; globally unique).

Regarding claim 90, the method according to claim 89, further comprising the step of maintaining a separate list representation of existing partially complete gateway connection states (Brustoloni: col. 1, lines 49-56; translation table; Fig. 6), and wherein said partially complete outside-realm representation is identified based on comparison with corresponding information of all existing partially complete gateway connection states represented in said list representation (Brustoloni: col. 1, lines 25-50; lookup and match).

Regarding claim 91, the method according to claim 90, wherein said step of identifying an outside-realm gateway address comprises the step of traversing outside-realm gateway addresses associated with said gateway until finding an outside-realm gateway address, which in combination with said predetermined connection information included in said identifier query has no counterpart in any existing partially complete gateway connection state represented in said list representation (Brustoloni: col. 8, lines 49-57).

Regarding claim 92, the method according to claim 90, wherein said step of identifying an outside-realm gateway address comprises the step of verifying that a pre-allocated outside-realm gateway address in combination with said predetermined connection information included in said identifier query has no counterpart in any existing partially complete gateway connection state represented in said list representation (Brustoloni: globally unique; col. 5, lines 40-50).

Regarding claim 93, the method according to claim 88, wherein said predetermined connection information included in said identifier query is an outside network address of said outside node, and said complementary connection information for completing the gateway connection state includes a port number of said inside node and a port number of said outside node (Brustoloni: col. 1, lines 25-56; Fig. 6).

Regarding claim 94, the method according to claim 88, wherein said predetermined connection information included in said identifier query is an inside node port number, and said complementary connection information for completing the gateway connection state includes an outside network address of said outside node and a port number of said outside node (Brustoloni: Fig. 6).

Regarding claim 95, the method according to claim 87, further comprising the step of notifying said outside node of said identified outside-realm gateway address (Brustoloni: col. 5, lines 40-44).

Regarding claim 96, the method according to claim 87, wherein said user-resource identifier query is a Domain Name Server (DNS) query (DNS is an Application Level Gateway as defined by applicants IDS- Network Working Group; col. 1, lines 60-66).

Regarding claim 97, the method according to claim 87, wherein said inside address realm is a private address realm and said outside address realm is a public address realm (Brustoloni: col. 1, lines 25-56).

Regarding claim 76, the system according to claim 67, wherein said means for identifying an outside-realm gateway address, among the outside-realm gateway addresses associated with said gateway, includes a gateway resource manager (Brustoloni: col. 5, lines 25-50; Fig. 1; brustoloni teaches allocating and deallocating network resources).